

APPENDIX 1

CONCEPTS OF POVERTY AND LIVELIHOOD

POVERTY

Cagatay (2001) indicates that the definition of poverty is changing from that of a shortfall in private consumption or income and it being viewed in absolute terms to that of relative terms. That it should be viewed as a process rather than a state of being. Furthermore, that those living in poverty should be seen as deploying whatever assets they possess in an effort to cope with poverty. In this regard, poverty is categorised into three groups: absolute poverty, relative poverty and social exclusion. Absolute poverty refers to the minimum basic needs required to meet the physical demands of life such as food, shelter, clothing, health and water. This measure basically refers to the physical needs of life and seems to neglect the social aspects of poverty. This concept uses the idea that there are absolute standards that can be identified. Absolute poverty measures have some element of relativity in their computation since they take account of the way people live in a society and adjusting for ways in which peoples lives are changing. With respect to relative poverty, people are classified as poor if their resources fall significantly below that of the rest of the society in which they live. To come to a conclusion on relative poverty in a society, a range of issues have to be agreed upon, such as how broadly should resources be defined; how far is significantly below, and so on. The definition taken by social scientists may be tight or flexible as to the level of living below that which is regarded by a society as the necessary minimum for meeting the basic needs of life. What may be described as decent may change with time as must be taken into consideration. Others look at the poverty issue on a broader perspective taking into consideration the existence of inequality in opportunities in areas such as health, educational achievement, job prospects, income levels and life expectancies. Hence, relative poverty may also address broader implications of living in poverty such as the inability to participate in and contribute to that society on an equal basis, due to lack of sufficient income. Socially excluded, is synonymous with relative poverty. Social exclusion may lead to poverty and may itself be the result of poverty. Social exclusion however, is prevalent among the poor and non-poor. Poverty is also defined as the denial of civil, political, social, economic and cultural rights of citizenship (LAPA, 2004).

Causes of Poverty

In a majority of sub Sahara African countries, evidence on the distribution of poverty shows that poverty is more prevalent in rural than in urban areas (FAO and World Bank, 2001; Khan, 2001). Problems of powerlessness and vulnerability to socio-economic shocks also affect women disproportionately. Thus women's ability to capitalise on new opportunities in the broader economic and political environment is reduced. Other factors that cause poverty are low levels of production technology, high illiteracy rates among the overall population, and undeveloped rural infrastructure. The problem of inadequate infrastructure retards the flow of farm inputs and agricultural products. Between the period 1992-1998 Sub-Saharan Africa's crop yields averaged 1.2 metric tons per hectare where as that for Asia, South America and the global average were 2.9, 2.6 and 2.8 metric tons per hectare respectively (source). High illiteracy rates also causes a hindrance to farmers' rate of adoption of new improved production technologies in Africa. These retard the rate of improvements in crop yields. The occurrence of endemic diseases such as

malaria and livestock diseases such as trypanosomiasis caused by the tsetse fly has limited the cultivation of productive agricultural lands in Africa. This results in low farm incomes and eventually ends up in retardation in the rate of poverty reduction.

The factors that cause poverty differ from group to group. This is evident in the fact that the causes of poverty to the economically active are different from that of dependants such as the elderly, the disabled and children. Also the concerns of poor women who are characterised by limited or no access to productive resources such as land, credit and employment opportunities are different from those of people who slip into poverty due to external shocks like declining commodity prices. Refugees resulting from internal shocks such as drought, floods, pestilence and civil strife also face problems of poverty that have among others special characteristics. In these situations, poverty is transitory, resulting from short-term shocks such as declining commodity prices, droughts and famine, massive retrenchment of public employees, and sharp and sudden increases in prices of commodities consumed by a majority of the population.

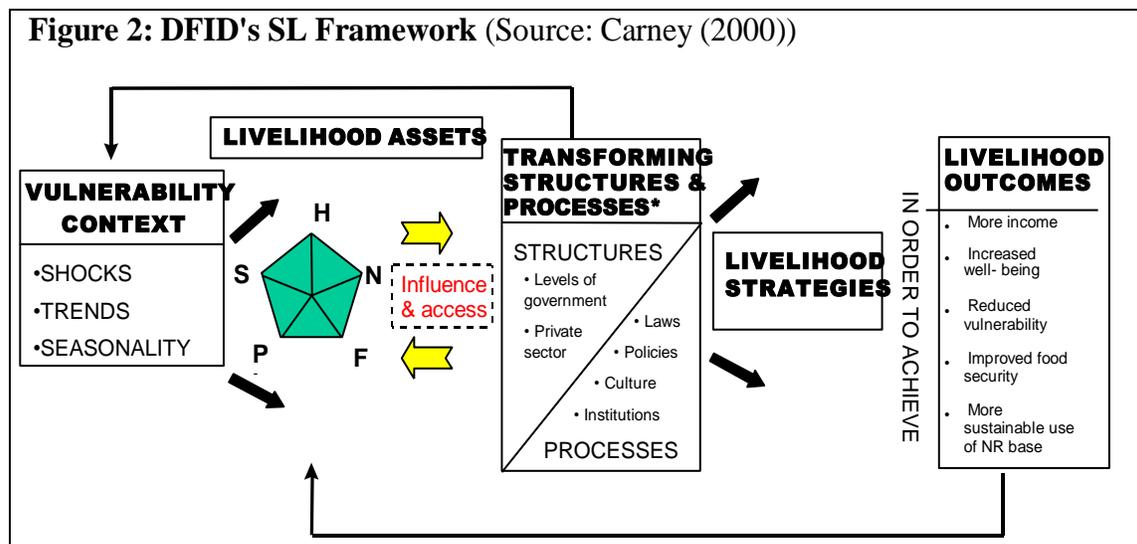
Poverty in Africa can also be explained by a policy environment that is not conducive to growth, lack of access to productive assets such as land and credit, inadequate extension services, high levels of income inequality, the HIV/AIDS pandemic, and environmental degradation. The persistence of these problems has prevented countries from realising their potential for high economic growth and reducing poverty. Due to the HIV/AIDS pandemic productive members of society are being lost and their children as well as adult dependants pushed into permanent or chronic poverty. Thus, it is important to examine the economic and social contexts, including institutions of the state, markets, communities, and households, when carrying out studies on poverty. The differences in poverty cut across ethnicity, age, gender, location and income sources (Khan, 2001). For these reasons poverty usually vary for different locations and social groups.

DFID'S SUSTAINABLE LIVELIHOODS (SL) FRAMEWORK

DFID's sustainable livelihoods (SL) framework presents the main components affecting people's livelihoods and the relationship between them. In particular the framework:

- Provides a checklist of important issues and sketches out the way these link to each other.
- Draws attention to core influences and processes.
- Emphasises the multiple interactions between the various factors, which affect livelihoods.

Rather than a model of reality, it is intended to be a tool to engage stakeholders with different perspectives in constructive debate about the many factors that affect livelihoods, their relative importance and the way they interact (DFID SL Guidance Sheets).



APPENDIX 2

POLICY TYPOLOGY AND AGRICULTURAL POLICY ANALYSIS

What is Policy?

In order to access the agricultural policies in FASDEP and GPRS, and to facilitate discussion of the agricultural policies that are either growth oriented or pro-poor, or both, it is important to provide some basis for a common understanding of the terms that are usually referred to both in the literature and among practitioners. Some discussion of agricultural policy and related terms are therefore attempted.

The term *policy* refers in general to a purposive course of action that an individual or group follows in dealing with a problem. Thus *a policy* is a “standing decision” characterised by behavioural consistency and repetitiveness on the part of both those who make it and those who abide by it (Eulua and Prewitt, 1973). Policies, in the public domain, are government actions intended to change behaviour of producers and consumers. Public policies are those developed by government or by officials within government bodies. It is the purposive action by actors in public institutions to provide direction in government. Practically, public policy is a course of governmental action (Jones, 1984) or inaction in response to public problems that is expressed in symbolic goals, statutory and judicial mandates, and the rules, regulations, and practices of agencies that implement programmes. In essence, public policy is what governments and public officials choose to do or not to do about public problems such as agricultural development, health care, economic development or environmental degradation. Such public policies typically represent a settled course of action or pattern of activity over time, not a single or discrete decision.

Terms used to refer to (public) policy can be confusing. Jones (1984) suggests the distinguishing of various components of public policies that may be mistaken for policy itself. These include goals, plans, proposals, programmes, decisions and effects. Analysts distinguish between *policy outputs*, the actions that governments take to pursue their goals, and *policy outcomes* or *policy variables*, the effects or impacts such actions have on society (*national income, price level, etc.*). *Policy objectives* are the desired goals of policy as defined by the policy makers and *policy strategies* are the set of policy instruments that government officials can use to achieve their objectives. *Policy instruments* are variables that one controls directly in order to achieve policy variables. *Constraints* are the economic realities that limit what can be accomplished.

Policy Typology

Lowi’s Policy Typology: Lowi (1972) describes four policy typologies: *distributive, regulatory, re-distributive* and *constituent*.

Distributive policies are characterised as individual programmes that government provides to a number of areas without concern to limited resources or zero-sum situations (where one group’s gain is another’s loss). Examples of such policies include agricultural subsidies. Distribution occurs evenly among citizens (or a large majority). Since no one is harmed by the provision of

these benefits (when spending limits and budget deficits are not prominent concerns) there is no real opposition in approving them.

Re-distributive policies, where one gains from another’s loss, are those types of policies in which a redistribution of wealth or some other valuable resource is sought. These policies seek to inform citizens who can and cannot control certain valued resources depending upon their own status, among other things. High levels of conflict exist because large numbers of citizens are generally involved and the resources being controlled are highly valued. Hence there are winners and losers associated with their passage and these policies tend to be highly controversial and difficult to adopt. Some examples include welfare, social security and income tax policy.

Regulatory policies is government restriction of individual choice to keep conduct from transcending acceptable bounds (Meier 1993) and covers a wide range of governmental activities from protecting consumers from unfair business practices to protecting environmental quality (environmental policy). Krane (2001) indicates that there is some moderate level of conflict because some persons or groups are privileged and others are deprived by controls.

The range of regulatory policy is so broad that Ripley and Franklin (1991) divide it into two major types: competitive and social regulatory policies. Competitive regulatory policies are mostly associated with the regulation of specific industries and their practices, and protective or social regulation protect the general public from activities that occur in the private sector.

Constituent or large public interest policies arise when there is a large interest on a subject from the public and, generally, the policy designed as a result is a constituent policy. Lowi (1972) states that these policies must affect a large number of people in a consistent way and that there is a great deal of conflict in dealing with constituent policies especially in dealing with people who are active in the political process.

The relationships that exist between these, their impacts and effects are presented in the table below (Table A2.1).

Table A2.1. Lowi Policy Typology: Relationships and Impacts

	Immediate	Remote
Direct	Distributive	Re-distributive
Indirect	Regulatory	Constituent

Wilson’s policy typology: Wilson’s typology of policies concerns differences in the distribution of the benefits and costs of public policies. Wilson suggests that important determinants of who shapes policy, and how, and whether benefits and costs are broadly or narrowly distributed. Four types of politics associated with benefits and costs of public policies are discussed: *majoritarian*, *entrepreneurial*, *client* and *interest group politics*. The relationship between these is summarised in Table A2.2.

Table A2.2. Wilson Policy Typology

BENEFITS		
Cost	Broadly Distributed	Concentrated
Broadly Distributed	<p><u>Majoritarian politics</u></p> <p>Examples: education reform, security, general tax benefits</p>	<p><u>Client politics</u></p> <p>Examples: subsidies for farming, mining, immigration policies, etc.</p>
Concentrated	<p><u>Entrepreneurial politics</u></p> <p>Examples: environmental protection policies, food and drug regulation</p>	<p><u>Interest group politics</u></p> <p>Examples: fixed phones versus mobile phones, etc.</p>

Source: Understanding Politics and Public Policy: www.....

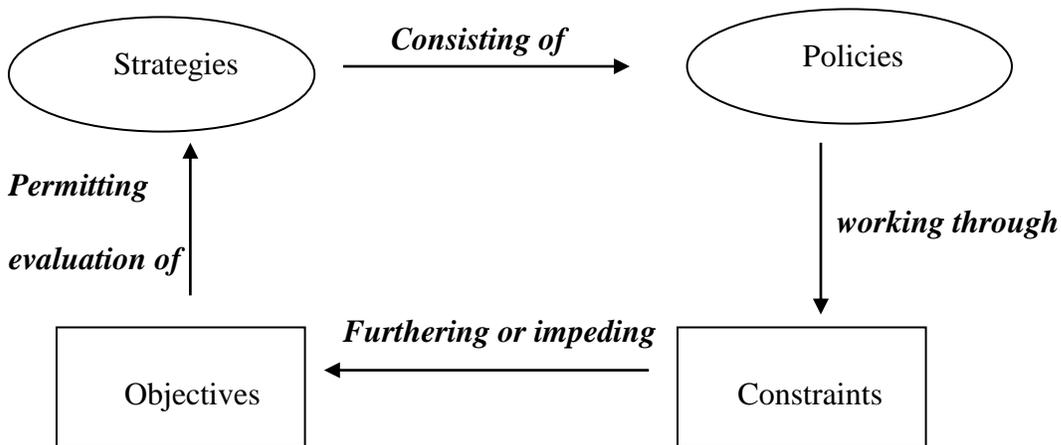
With the *majoritarian politics*, both the benefits and costs associated with the benefits are distributed broadly. Majoritarian politics pitch the general public against itself, as it considers or reconsiders programmes with broadly distributed costs and benefits. Examples are social security and educational reforms. These are policies that have the opportunity to encompass everyone at some point in his or her life.

The *entrepreneurial politics* provide for concentrated costs and largely distributed benefits such as environmental protection. The benefits of *client politics* are more concentrated on specific programmes or groups. All share the costs associated with these policies whether or not people are directly affected by the policy. *Interest group politics* focus on specific groups and the benefits and costs associated with them are more focused towards those receiving the benefits (Krane 2001). With this, powerful groups benefit and the benefits to individuals are minimal if at all.

Analysis of Agricultural Policy

Governments form agricultural strategies by choosing a set of policies to further their objectives subject to the constraints on the agricultural economy. Thus a framework for analysing agricultural policy should envision objectives, strategies, policies and constraints as outlined in Figure A2.1:

Figure A2.1: The Agricultural Policy Analysis Framework



Adapted from Scott Pearson: A Framework for Agricultural Policy Analysis, Stanford Univ.

Thus the analysis of Ghana’s agricultural policy framework must include strategy targets (strategies); policy instruments (policies); principal economic variables (constraints) and policy objectives (objectives). In addition, the policy type and government instruments in place in the policy should be assessed. The following provides some explanation of the various elements of policy.

Policy Objective/ Goal: An end to achieve

Policy Strategy: Broad or general approach adopted to achieve the objective

Policy: Guiding principles by which decisions are to be made to put the strategy into effect

Policy Instrument: Measures adopted to carry out the policy

Applying the terminologies in a practical case of a policy implemented:

Objective: Achievement of self-sufficiency in food requirement (end to achieve)

Strategy: High yielding varieties (HYV) program (potential means to achieve goal)

Policy: Use of government subsidies to encourage fertiliser use (incentives to motivate action)

Policy Instrument: Sale of fertiliser by co-operative to farmers at prices lower than market prices (institutional arrangement).

Instruments of Policy

When making policy choices, governments have available a number of mechanisms that they can use to influence society and its citizens. Policymakers consider many factors when deciding which policy instrument to use for a particular problem or issue. The most obvious consideration is the potential effectiveness of the instrument to address the problem. Others may include the instrument’s political acceptability, economic impact and long term effects. Governments have a wide array of tools from which they can choose, including regulation, government management (provision of public services), taxing and spending, use of market-based approaches and public education or information provision.

Regulation, a well known instrument of public policy, includes a number of different types of government actions including laws passed by legislature and rules adopted by bureaucracy. They are governmental decrees that require citizens to do something or prevent citizens from doing something. The requirements issued are enforced by the ability of government to ensure compliance through some form of punishment.

Government management or the provision of direct services of resources is an instrument of public policy. Education, defence are examples of policies that governments implement by providing the service directly to their citizens. In most cases, governments offer these services because they need to be provided in a specific way. But some governments, especially at the local level, contract out some services (waste disposal, for example) to private firms.

Taxing and spending. Governments can use their ability to tax and spend as a way of achieving policy goals and objectives. One form of spending policy is direct payments (money) made to citizens such as social security. Government spending policies also affect a wide range of public activities, from scientific research to protection of public lands. The use of tax policy promote (recycling of refuse, etc.) or dissuade (cigarette tax, pollution tax, etc.) certain activities.

Market mechanisms. The government takes advantage of the market mechanism as a form of public policy. Using the market may be an explicit decision by government not to intervene in any way and thus allow the laws of demand and supply to deal with the public problem. The government can also actively use market incentives rather than other approaches to achieve political goals.

Education and information. The government can educate or provide information to citizens in order to encourage them to behave in a certain way.

Contexts of Public Policy

These contexts set the rationale for government actions and interventions. In the economic context, the economy has a major impact on the types of policies that governments implement. A strong economy, for instance, will often lead to lower levels of unemployment, which in turn could lead to a decrease in poverty levels. The economy itself, therefore, affects the development of other substantive programmes. When an economy is weak governments determine that needs exist to become involved in offering solutions. Governments take an active role. In fashioning out policies to address a weak economy, governments propose macroeconomic (economy wide) and microeconomic (sectoral and sub-sector) policies to address the economic constraints.

APPENDIX 3

ANALYSIS OF AGRICULTURAL SECTOR POLICIES THAT PROMOTE MODERNISATION

Agricultural Modernisation

According to Jules Pretty and Rachel Hine¹, the process of agricultural modernisation during the 20th century has produced three distinct types of agriculture. These are the “industrialised”, “Green Revolution”, and the “pre-modern” (also called the “traditional” or “unimproved”). The first two types have been able to respond to modern technological packages, producing highly productive systems of agriculture. Their conditions were either like those where the technologies were generated, or else their environments could easily be homogenised to suit the technologies. These systems tend to be endowed with access to roads and urban markets, modern crop varieties and livestock breeds, inputs, machinery, marketing infrastructure, transport, agro-processing facilities, credit, and water supply. The third category, the ‘pre-modern’ or ‘unimproved’ agricultural systems tend to be complex and diverse, with low crop yields. They generally use traditional technology (such as the hoe and cutlass), and may include but not limited to farmers who are remote from markets and infrastructure; located on fragile or problem soils; and are less likely to be visited by researchers and extension workers.

In the view of Todaro (1992), there are three major stages in the evolution of agricultural production. The first is the pure subsistence farming which is characterised by risk, uncertainty and survival. Its features include one or two staples for food, low output and productivity, use of the simplest tools, minimal capital investment with land and labour being the main factors, fear for survival arising from lack of rains, appropriation of land and indebtedness to money-lenders, workers who are fully occupied at seasonal peaks but who are otherwise underemployed, and cultivation of only as much land as the peasant’s family can manage without the need for hired labour. It is also characterised by technological limitations, rigid social institutions, fragmented markets and fragmented communication networks between rural and urban centres, which tend to discourage higher levels of production. The law of diminishing returns operates in such a system and there is an important role for women.

The second is the mixed or diversified farming where part of the produce is grown for home consumption and part for sale to the commercial sector. New cash crops are established, together with simple animal husbandry so that staple crop no longer dominates farm output. Simple labour saving devices such as small tractors, power tillers, mechanical seeders or animal-operated steel ploughs can be introduced to free labour for other farm activities. Diversified farming represents a logical first step in the transition from subsistence to the third stage, namely, the modern farm or specialised agriculture.

The modern farm is exclusively engaged in high productivity, specialised agriculture catering entirely for the commercial sector. The specialised farm represents the final and most advanced stage of individual holding in a mixed market economy. It is the most prevalent type of farming

¹ http://www2.essex.ac.uk/ces/researchprogrammes/what_is_susagBa1.htm

in advanced industrial nations. It has evolved in response to and parallel with the overall development in other areas of the national economy

The central focus should therefore be on how we can encourage transitions in both 'pre-modern' and 'modernised' systems towards greater sustainability. A sustainable farming seeks to make the best use of nature's goods and services whilst not damaging the environment. It does this by integrating natural processes such as nutrient cycling, nitrogen fixation, soil regeneration and natural enemies of pests into food production processes. It also minimises the use of non-renewable inputs (pesticides and fertilisers) that damage the environment or harm the health of farmers and consumers. It makes better use of the knowledge and skills of farmers, so improving their self-reliance. It seeks to make productive use of social capital - people's capacities to work together to solve common management problems, such as pest, watershed, irrigation, forest and credit management. Sustainable agriculture not only produces food and other goods for farm families and markets, but it also delivers many unique non-food functions that cannot be produced by other sectors (e.g. on-farm biodiversity, groundwater recharge, urban to rural migration, social cohesion, etc.).

What are the Agricultural Sector Policies that Promote Modernisation?

A critical look at various documents, particularly FASDEP and GPRS, shows no specific policies (as explained in Section 4.3) have been clearly outlined. However various measures and strategies that promote agricultural modernisation in Ghana have been presented. In this section, a review of the identified policies/strategies is undertaken to see the similarities, differences, and possible conflicts/inconsistencies that exist between FASDEP and GPRS documents.

Storage

In the FASDEP document under crops and fisheries, inappropriate as well as expensive storage facilities are recognised as the constraints to agricultural production, though no detailed analysis of the problem was undertaken. To remove the constraint, MoFA will support farmers to access credit to construct appropriate storage facilities and support research into best storage practices for adoption. The specific kind of support that will be given and under what terms and conditions is not explicitly stated. In addition, no target has been set to allow for monitoring and assessment.

The problem of post-harvest losses was not analysed and discussed in any detail in the GPRS. No specific goals have been set to be achieved. Yet a number of strategies were listed to tackle the post harvest loss problem. The listed strategies were not discussed and alternatives considered. Some of the measures proposed were used for different purposes in the FASDEP. For example, inventory credit scheme was to be used to extend credit to farmers in FASDEP, instead it is used in the GPRS to reduce post-harvest losses. This inconsistency in the two documents needs to be addressed to remove confusion.

Processing

The FASDEP document gave reasons for processing as: to add value, increase shelf life and expand demand for agricultural produce. Processing is also to reduce post-harvest losses and

promote price stability. Though the problem with processing was not fully analysed, it was proposed that MoFA will identify and promote appropriate processing technologies at the farm and industry levels. MoFA will also support the private sector to invest in these technologies. It is difficult to assess this policy since it is not clear the kind of support MoFA will give and the form it will take. It is not clear the specific types of technology that will be promoted and for which specific groups of private sector operators.

FASDEP proposed pilot projects to demonstrate performance of new technologies and business opportunities. However, it is not explicit who will manage the pilot projects, the duration of the pilot projects, and the specific commodities to be covered under the programme. Effective extension services delivery is to be used to address quantity and quality of raw materials for processing. Here again no targets have been set, though specific industries are identified with no priority.

Under fisheries though the processing problem was not fully discussed, the “Chorkor Smoker” was to be further developed and promoted by MoFA in collaboration with research institutions and the technical institutions. The policy and policy instruments are not clearly stated making it difficult to assess the outcome. Under improved access to input and output markets (page 42 of FASDEP) it is stated that results of research conducted on indigenous foods will be made available through the Statistical, Research and Information Directorate of MoFA and the Commercial and Business Unit (CBU) of the Council for Scientific and Industrial Research (CSIR). MoFA will collaborate with other bodies to set up pilot processing plants for selected commodities. This provision does not constitute a policy.

The GPRS document discusses production and employment in agro-processing. The strategy will be in general, to favour labour intensive technologies. It will favour rural location over urban, for processing plants and favour crops which can be produced by smallholder operators. Agro-processing firms will be encouraged within the strategy to develop contract-farming or out-grower schemes with smallholder suppliers. No specific policy instruments were indicated to guide the favoured actions. Similarly, no specific incentives are provided to induce private sector operators to adopt the proposed schemes. It is therefore difficult to assess the targets set for the policy to achieve and the likely impact.

The GPRS states that support to agro-processing must be particularly targeted to women who already are in the extraction of shea butter, palm oil, groundnut oil, and many others. Suitable groups and cooperatives are to be formed to facilitate such support. Support to these groups of processors would be in the form of micro-credit and will largely be market based. Training and entrepreneurial skills development may be the other element of support that could be free. These selected support measures are not based on a thorough problem analysis and how these constraints could be removed. The GPRS has not set any specific target to achieve from a well established base.

Both FASDEP and GPRS see the agro-processing problem from different angles and have different objectives for the sub-sector. As a result, the proposed measures are inconsistent in addition to the fact that both documents failed to analyse the problem in the sector and to set specific target to be achieved with the measures proposed.

Inputs

Under the crop sector, FASDEP proposes that the solution to the problem of making improved seeds and planting materials available to farmers at affordable prices is to make breeders, foundation seed producers and seed growers to expand their operations. This will require training and financing. No measures are proposed to address these required needs to provide the necessary solutions. To ensure quality control and access to the materials by farmers, MoFA will be strengthened to carry out effective seed certification services and facilitate market linkages. How these would be achieved is not made explicit. What targets are envisaged should also have been stated to allow for assessment of impact.

Another measure to improve the supply of planting materials in the FASDEP is to finance the CSIR and the universities to undertake biotechnology research into crops selected for support. Who will do the funding and the targets to be achieved are not provided. The problem of limited access to improved planting materials will also be addressed through a sustainable national multiplication programme with public and private sector participation. The roles and incentives to ensure this happening are missing from the document.

No specific policy measures are proposed for the livestock and fisheries inputs in the FASDEP. In terms of feed quality control, the Animal Production Directorate, Ghana Standard Board and Animal Research Institute will collaborate to set standards and regulate the industry. It has not been made clear the problem of the sub-sector and whether the setting of standards will address the problem. No targets were also set to assess progress in this direction.

The GPRS makes no explicit statement on inputs. It does not mention any problem in this area requiring specific policy and policy measures. Alternatively, the GPRS left this aspect exclusively to FASDEP to address.

Output

FASDEP lacks detailed analysis of the marketing problems facing the agricultural sector as a whole and the various segments of the sector. It proposes market information will be provided to help producers make good decision regarding domestic, regional and international markets. The specific strategies for development of alternative products and advantageous ways of marketing, including product development, processing, market information, packaging and labelling, transport, handling and storage, standards and quality control, national strategic buffer stock, and external trade issues have not been analysed.

Product Development

No policy is outlined in the FASDEP. It only states MoFA will support both public and private institutions to identify exportable products of value.

Market Information

Vital information for competitive advantage would be made available by the commercial desks of Ghana's diplomatic missions. It is not clear how this will be done, and the types of information that will be most useful for different private sector players. Information packages

will be given to Ghana's mission to enable them promote local products. How this will be done is not explicit. It is necessary to indicate the promotional strategies and the targets to achieve.

Packaging and Labelling

No packaging and labelling policy is outlined in the document.

Transportation, Handling and Storage

The private sector is to be given support to acquire specialised haulage vehicles and equipment. The document does not state what this support is and in what form it will come, and targets of the policy. Appropriate and adequate storage facilities will be provided at designated locations for food and raw materials. The strategy for achieving this is not stated, and the incentive scheme to induce the private sector to respond has not been explicit. The policy therefore is inadequate to be evaluated on expected impact.

Plant Protection and Regulatory Services Directorate (PPRS) of MOFA will license and regulate all warehouse operators to ensure safety standards. This policy required further details regarding standard setting and legislature. This was not provided and therefore not a policy as such.

Standardisation and Quality Control

MoFA will liaise with the Ghana Standards Board (GSB), market queens and trade associations to establish and enforce available legislation for the use of weights and measures, grades and standards. It is not specific what role each of these partners are to play and what targets are to be achieved, and in which specific sub-sectors. Food safety standards will be developed by MoFA in collaboration with GSB and other relevant agencies and enforced by the private sector and MoFA for a successful export business. These are frameworks for policies to be developed.

The GPRS document acknowledges lack of standardisation and quality control as important weaknesses in the marketing system in Ghana. No analysis of the problem is done. However, it went on to propose measures to address the inadequately understood problem. The document states:

- Standardisation in marketing will be **encouraged and promoted** to improve the quality of production. Grades and standards that can be adjusted especially to meet changing requirement will be made a key determinant of Ghana's international competitiveness. Effort will be made to create a general sense that quality does matter.
- MoFA will liaise with the GSB to establish and enforce the legislation about using scales for selling food in Ghana. To facilitate compliance the appropriate scales should be ordered and sold to people who sell food commodities. The question is whom and under what conditions? The chances are that this measure will never be implemented. A line of credit will be opened for an entrepreneur who would like to import the scales. The rationale for targeting only one person is not made explicit, neither is the action justified. Product marketing associations will be used in the sale of the scales. No terms or negotiations have been done and agreement reached yet it is assumed that this will happen. The Extension Services Directorate of MOFA and the Ghana Information Services Department will be tasked with assisting the public to understand the fair use of

- scales and measures. The markets are under Local Government and Rural Development, it may be necessary to rope in the local authorities.
- The required resources will be mobilised in support of producers to improve quality including improvements in a system of grades and standards, plus vertical co-ordination needed to ensure high standards. The aim is to create reliable and profitable markets for the outputs of the smallholder producers. Reliable market outlets is to increase smallholders' willingness to invest in particular crops, livestock and fish.

These measures in the GPRS would contribute towards the modernisation of agriculture. However, there is a need to provide sufficient details on these policy measures.

National Strategic Buffer Stock (NSBS)

According to FASDEP it is important for Ghana to hold buffer stocks of cereals and legumes to cater for emergencies like poor harvest, other disasters, and during conflicts. The National Strategic Buffer Stock will hold one to three months' supplies of maize and rice built over a period. It is not clear what the intended period is. The stocks are to be held and managed by the private sector collateral managers. It is not explicit the incentive being provided for the private sector to undertake such an activity. According to FASDEP, MoFA will monitor and establish stock levels. It is unclear how MoFA can establish stock levels for a proposed private led sector activity. The stored grains will be linked to inventory credit schemes to complement the NSBS. What is stated here gives no details about what incentives are available for those willing to participate in the scheme. The document is also not clear on the timeframe for the intended support to the private sector.

FASDEP further states that some storage facilities of the defunct Ghana Food Distribution Corporation (GFDC) will be retained after divestiture for strategic purposes. These retained facilities will be rented out to the private sector for the NSBS and for other uses. The document did not state how many of the warehouses are being retained, the capacity and locations. It does not also indicate terms and conditions of their use.

In the GPRS document, the buffer stock will comprise one-month supplies of maize, rice and cowpeas, which is slightly different from that stated in the FASDEP. In addition, the GPRS proposed that in the medium term when the livestock project has produced appreciable volumes of stock and canned meat become more available, this would be included in the NSBS. This is not identified the FASDEP. However, no specific targets are set to trigger the inclusion of meat in the NSBS. The policy regarding the use of the buffer stock is explicit in neither the GPRS nor the FASDEP.

Husbandry

The FASDEP discusses how to tackle issues related to crops such as land preparation, planting, land and water management and soil fertility improvement, disease and pest control, harvesting and handling. In the case of livestock, the control of diseases, and the development of the dairy industry; and for fisheries stock rebuilding and management, aquaculture – production of fingerlings and construction of ponds -- and fish husbandry and health are mentioned.

Land preparation: MoFA will facilitate farmers' access to agricultural machinery and equipment such as tractors and bullocks, where suitable. There is no detail on the nature of

support and the targets to be achieved through this policy. MoFA will also support the establishment of plant pools by private entrepreneurs for leasing of machinery and equipment and manufacturing implements. The support will involve assistance in acquiring credit, technical training and institutional support. The nature of assistance must be explicit and unambiguous. As things stand now, it is not clear the nature and extent of the named support areas. It may be necessary to also indicate the conditions to be fulfilled by potential beneficiaries of the support.

Planting: MoFA will promote the use of portable jab planters and small mechanical planters through information dissemination. There is little indication of how this will be achieved and how wide spread usage is envisaged. Local manufacturing of tools and equipment will be encouraged by helping entrepreneurs to obtain credit for their operations. The policy has not identified beneficiaries and no targets set to be achieved. It is also not clear if specific incentives are being provided in relation access to credit and the nature of the credit.

Individual farmers and farmer groups will be assisted to obtain credit to enable them acquire the tools and implements from manufacturers. The form of the assistance is not explicit for one to assess the feasibility of this working. It is also not clear under what terms and conditions the facility can be accessed. Nucleus farmers will also be assisted to procure tools and implements for hire to out-growers. The incentive being provided nucleus farmers for them to get involved and the estimated nucleus farmers and out-grower farmers to be affected must be explicitly indicated.

Land and Water Management and Soil Improvement: The Department of Crop Services of MoFA will create awareness and train farming communities to adopt sound land and water management practices, which include mixed farming, use of agro-forestry systems and effective use of organic and inorganic fertilisers. No target in terms of identified farmers and number of farmers is set for this policy.

Disease and Pest control: To reduce crop losses, disease and pest control at the farm level will be promoted by encouraging the application of Integrated Pest Management (IPM) methods. How this is going to be promoted is not clear and the target of this promotion is equally not stated. Two other strategies mentioned in the FASDEP document are quarantine as the first line of defence will be strengthened, and the appropriate use of recommended pesticides for control of pests that are not responsive to bio-control intensified.

Harvesting and Handling: FASDEP recognises that the appropriate harvesting equipment is not widely available and therefore there is the need to support research to develop prototypes. However, no specific tools and implements were identified for focus. It has also proposed the upgrading of the current post-harvest practices to maintain quality and extend shelf life. No specific measures are proposed. This may be due to the fact that no detailed analysis of the problem has been undertaken.

Control of Animal Diseases: The government has liberalised the procurement and distribution of veterinary drugs and partly privatised the delivery of animal health care services to improve the efficiency of the service delivery. MOFA is to continue to support the increasing role of the private sector in the delivery of animal health services. To ensure the success of the programme, government was to withdraw from the provision of services such as clinical diagnosis and

treatment in geographical areas where there are private practitioners. It is necessary to make explicit the kind of support MOFA will be giving the private sector and the target group to enable an assessment to be undertaken.

The public sector will remain responsible for such functions as disease surveillance, quarantine, quality control of remedies and vaccines, public health and disease control, planning for emergencies and reporting to international bodies, import-export inspection according to international standards, general formulation of animal health development policies, and creation of the enabling environment for the private sector operators.

Development of the Dairy Industry: Dairy development will be based on local herds upgraded through artificial insemination to increase milk production. The need for a dairy industry and the potential and measures to build a credible milk herd have not been made clear. According to the FASDEP document the collection and marketing of milk will be fully transferred to Farmer Based Organisations (FBOs), while the Agricultural Production Directorate's dairy cattle breeding farm at Amrahia will be turned into a self-sustaining training facility. No indication is given as to how this will be achieved and when it will be realised. At MoFA level, the dissemination of dairy production and marketing technology will be fully integrated into the regular programme of Subject Matter Specialist (SMS), and all other activities privatised. GPRS did not elaborate on dairy development strategy.

GPRS deals with livestock development on block basis, and gives limited details as to what is likely to happen in the sector. In the GPRS, the livestock development strategy will focus on: (i) production of improved breeds, (ii) production of good quality animal feed, (iii) development/processing of meat and dairy, (iv) control of local animal diseases and the prevention of external diseases being introduced through effective surveillance and quarantine procedures, (v) improvement of husbandry practices, and (vi) discouragement of subsidised and cheap imports. It provides no identifiable policy for the sector.

Development of Landing Sites

To reduce the risks that fishermen face especially in landing their catches on open beaches, MoFA will support the development of landing sites for both marine and inland waters in collaboration with the District Assemblies. It has not been made explicit the kind of support to be given, the terms and conditions of the support, for how long, and the expected impact.

Aquaculture

The policy on aquaculture from the FASDEP will focus on (i) production of fingerlings, (ii) construction of ponds, (iii) and fish husbandry and health. The strategy for increasing fingerlings supply is to rehabilitate existing public sector hatcheries and re-stock them with good quality brood stock. According to FASDEP, in the short term, the public sector will continue to manage the hatcheries and promote the industry and eventually transfer this role to the private sector, once it becomes profitable and their capacity has been improved. The short term is not defined and the time horizon for profitability to emerge has not been projected. Since no detailed analysis has been provided on the problems of the aquaculture sub-sector, it is doubtful if there would be enough incentive for private sector to take over.

To effectively promote private sector participation in the aquaculture, the extension officers are first to be trained, then they are to provide training and advice in hatchery management. Given the current farmer to extension officer ration of 2,500: 1, and the limited number of fisheries officers, it is unlikely that there could be any massive private sector participation in the short term. Only policies providing high doses of incentives will attract investor to the sector. In the absence of any detailed analysis of the policy, it is difficult to provided impact assessment.

Construction of Ponds

FASDEP states that government has established, trained, and equipped pond construction gangs in high aquaculture districts. It provides no details of the districts involved and the number of gangs trained. It is therefore difficult to assess the number of ponds that can be constructed in a year. Existing ponds owned by the public sector will be rehabilitated and transferred to private sector operators. The process of doing this is also not clearly stated and the incentives for potential take over not spelt out in the document.

Fish husbandry and health

FASDEP states that fish farmers will be trained to acquire the necessary skills in fish husbandry, harvesting, and disease management. It is unclear who will be trained, how many, how they will be trained, and the conditions for participation in the training, as well as the impact that is expected from the training in the short to medium term.

Aquaculture in the GPRS is to be supported and corrective measures and policies formulated to prevent the use of gear to offset the practices leading to the depletion of both marine and inland fish habitats (GPRS page 83). This shows a clear misunderstanding of the problems in the sector. The document admits policies affecting the sector will be formulated into the future. This contradicts the measures in the FASDEP.

Research

There are no clear cut policies outlined in the FASDEP for research in support of modernisation. It however, recognises the importance of research in the agricultural sector performance. Under research-extension-farmer linkage (page 33), the linkage is to ensure that technologies generated by research meet farmers' needs. The strategy is to ensure that relevant extension information reaches the farmer and farmer's problems reaches the researcher; links among researchers, extension officers and farmers are being strengthened through the Research Extension Liaison Committees (RELCs). Farmers' research issues are addressed by researchers, extension issues are taken up by the extension services, and policy issues taken up by MoFA head office. The response of research to farmer problems continue to be slow since no or only limited budgetary allocations are provided for farmer-oriented research.

In the GPRS, MoFA is to seek to improve appropriate technology generation, transfer and dissemination by both private and public sectors at all levels, while ensuring the sustainable use and management of the nation's natural resources. Priorities determined under the National

Agricultural Research Programme will continue to catch attention with a focus on profitability and acceptability. No specific policies are outlined in the GPRS document for research.

Out-grower scheme

FASDEP mentions the out-grower scheme as an instrument for dissemination of technology information in Ghana. It therefore called for the strengthening of farmer-based organisations (FBOs). This strengthening is to be done in collaboration with the Department of Cooperatives. Another measure is the establishment of a fund to support FBOs development.

The GPRS on the other hand recognises that the Department of Cooperatives that must lead the way is itself much in need of reorganisation and capacity building. This means much more measures are needed than appreciated in the FASDEP.

Mechanisation

FASDEP recognises the need to adopt mechanised farming on a much wider scale. As such MoFA is to facilitate farmers' access to agricultural machinery and equipment such as tractors and bullock ploughs where suitable, through the establishment of plant pools by private entrepreneurs for leasing of machinery and equipment and manufacturing implements.

Another strategy is to promote the use of portable jab planters and small mechanical planters through information dissemination to reduce drudgery and increase the efficiency of small to medium scale farmers. Local manufacturers of tools and equipment are to be helped to obtain credit for their operations. Credit is also to be made available to individual farmers or farmer groups for acquiring tools and implements from manufacturers. Nucleus farmers are to be assisted to procure tools and implements for hire to out-growers. In all these cases it has not been made explicit the specific support and assistance private operators will enjoy, who will provide the assistance, how the support will be administered, and terms and conditions to satisfy before benefiting. It is therefore difficult to assess the potential impact.

The GPRS is silent on policy regarding mechanisation.

Agricultural Credit Policy

There are two main sources of agricultural credit supply. These are the domestic and external sources of agricultural finance. Domestic sources are mainly the commercial banks, development banks, rural banks, credit unions, savings and loans associations, non-financial organisations such as NGOs, nucleus farm enterprises, traders, processors and solidarity groups. External sources of finance are mainly through projects sponsored by bilateral and multilateral agencies.

Among the domestic sources apart from the banks and the non-bank financial institutions licensed by the Bank of Ghana who operate under well defined laws and rules established for them, the other sources operate without any clearly defined laws. For those operating under no clearly defined laws and regulations the interest rates they charge and other terms they offer are not influenced by any rules and regulations at all.

Improving Access to Credit

Loans for the agricultural sector are mainly short-term. This restricts the availability of credit to activities with long-term duration. Credit for activities with long gestation periods are not available and will be funded under the proposed Agricultural Development Fund. Local banks and bilateral/multilateral donor institutions would be encouraged to create portfolios that cater for agricultural production with long gestation periods. No clear policy direction is given for agricultural credit.

Similarly, poor spatial distribution of credit institutions in the country is recognised as a constraint to accessing credit. Most banks operate only in urban areas. There are no specific policies to address the problem. Instead, it is stated in the FASDEP document that MoFA will liaise with the Ministry of Finance and the Bank of Ghana to address this imbalance and make banking services more accessible in rural areas.

Strengthening Rural Financial Institutions

Rural financial institutions were to be strengthened under the Rural Finance Services Project to develop appropriate financial products to make credit accessible to farmers. No specific laws, rules and regulations were proposed for approval to achieve what is proposed. Instead, MoFA in collaboration with the Bank of Ghana was to train farmers in credit management to help them improve on loan repayment. The training could serve as a pre-requisite for accessing agricultural credit.

Mobilisation of Funds

Under mobilisation of funds, no specific policy was observed. Measures were proposed to increase domestic savings using innovative approaches like the Grameen bank approach. Additionally, a levy on selected food imports have been proposed but not approved as law and specific levels set. The mobilised funds were to help provide credit to operators in the agricultural sector in addition to continuous reliance on external funds (loans and grants).

Specialised Lending Services.

No specific policy was outlined for this area of credit provision. It is unclear how the specialised lending services such as venture capital, leasing capital, plant pools and inventory credit will be made available to agricultural operators and under what conditions and terms.

Agricultural Development Fund (ADF)

An Agricultural Development Fund is proposed to mobilise additional funding to reduce dependence on donors and also address the need for long-term investment. The legislative Instrument on the proposal to outline how the fund will be created, funded and operated is not in place yet.

Rural Development and Industrialisation

Short, medium and long-term actions have been proposed to achieve the main goal of the GPRS. Policies and areas for intervention in response to medium-term growth and poverty reduction are grouped under five thematic areas, namely:

- Macro Economy stability
- Production and gainful employment

- Human Resource Development and provision of basic services
- Special programme for the vulnerability and exclusion, and
- Governance

Of particular interest to this PSIA study is the production and employment component. The actions to be taken are listed without prioritising and are not grouped in any form. There are also no action plans detailing how to achieve these proposals. The actions include, but not limited to:

Tax

- Remove taxation on cocoa production and break up monopolies in the distribution system with a view to minimising gaps between producer and consumer prices;

Storage

- Support the improvement of storage facilities to minimise post-harvest losses;

Road

- Improve the road network to streamline distribution and generally expose the rural sector to market incentives;

Land

- Develop and implement a land programme with a view to harnessing the potential of land as the main productive asset in rural development;
- Undertake re-forestation and rehabilitation of degraded lands;
- Enforce tree planting regulation by timber firms;

Women

- Introduce specific strategies to improve women's labour productivity and access to and control of economically productive assets, especially land;
- Empower women through the promotion of income generating activities supported by the introduction of improved technologies, credit and guaranteed markets;
- Support agro-processing, promoting the development of techniques and equipment which reduces the time burden of women;

Irrigation

- Develop small-scale irrigation schemes;

Farmer-Based Organisations (FBOs)

- Support development of farmer-based organisations (FBOs) to facilitate access to input, credit and markets;

Non-Traditional Exports (NTE)

- Support promotion of priority NTE

Human Resource Development (HRD)

- Support promotion of the informal industrial sector with provision for skills training
- Promote labour intensive methods in all appropriate building and engineering projects

International Trade

- Promote competitiveness in regional and international markets

General

- Initiate community participation in national resource and environmental management, monitoring & evaluation
- Initiate and implement effective planning of human settlement in the interest of efficiency and amenity
- Vigorously support all programmes which lead to sustainable livelihoods
- Increase the proportion of government expenditure in support of the agricultural economy

- Reduce dependence on traditional farming techniques that are time intensive and which results in low productivity
- Emphasise comprehensive, integrated rural development in priority locations

Non-Traditional Export development

The broad strategy is to increase NTE by reducing transaction costs and increasing the productive capacity of exporters. Without providing details on what exactly is to be done, it is difficult to assess the potential of it being done and done well.

Employment

The national employment strategy is based on creating an enabling environment to encourage investment and production nation-wide by the private sector. Other schemes contributing to employment generation include: credit schemes for small-scale enterprises and farmers, Enhancing Opportunity for Women in Development (ENOWID); Community Initiative Projects; Ghana Regional Appropriate Technology and Industrial Services (GRATIS), and the Intermediate Technology Transfer Units (ITTUs).

Key Issues and policy areas

The programme on production sought to improve public sector delivery of programmes but also provide sufficient incentive to stimulate private sector activities in increasing and sustaining production of basic staples, production of selected export crops, expanding employment in sectors and geographical areas that employ the poor most, and enhance the skills of the poor. The policy is not explicit enough. It does say what incentives will be provided, who the targets of the incentives are, and how the incentives will be delivered. It is therefore difficult to assess the impact, if any.

The Rural Environment as a Catalyst for Economic Transformation

While commercial agriculture is emphasised in the GPRS, it is stressed that priority would be given to smallholder agriculture. In support of production and gainful employment for poverty reduction the GPRS favours: a) labour intensive as opposed to capital intensive technologies (but with simple tasks employing simple mechanised means to reduce the drudgery of the farmer), b) rural over urban locations for processing plants, and c) crops which can be produced by smallholders. The GPRS states that provisions made in the strategy are not meant to run counter to the market mechanism. Support for resource poor farmers and groups and communities in terms of the supply of vital inputs such as fertiliser, improved seeds, improved breeds and credit facilities will be informed by successful market-based best practices from various projects around the country. Unfortunately, the GPRS, like the FASDEP, does not spell out the details of the strategy for an assessment to see the feasibility for implementation and likely impact to be expected particularly since support for resource poor farmers and groups will be informed by market based best practices. It is assumed that this is just a broad framework to be followed with a more detailed design later.

Increasing Agricultural Yields through Infrastructure, Market and Extension Service Provision

To reduce poverty, low agricultural yields especially of food crops, is to be increased through the provision of infrastructure, markets and effective extension service provision. Infrastructure includes irrigation development -- the strategy is to rehabilitate existing viable irrigation facilities to attract private sector management. The private sector will be encouraged to use the nucleus-outgrower schemes with groups of small-scale farmers and co-operative societies. To assess the chances of this happening requires details of the incentives.

Financial Sector Development

The strategy for financial sector development calls for macroeconomic stabilisation, of which sustained fiscal discipline is a *sine qua non*. Macroeconomic stabilisation along with a reduction of domestic debt will help lower interest rates and create incentive for private investment. In parallel, the government will need to deal with non-performing loans through **strengthened supervision and regulation**, recapitalising and eventually privatising state-owned banks. The government should **privatise or otherwise sell its equity in state-owned or state controlled banks**. On page 38 of the GPRS, are identified policies needed to create an enabling environment **for Direct Foreign Investment and Technology Transfer** to include infrastructure development, establishment of a legal framework for protecting property rights, contract enforcement and land tenure reform. The document fell short of explicitly stating what guidelines, laws, rules and regulations are needed to achieve this. The document goes further to state: policies should focus on **removing pricing distortions**. The real effective exchange rate of the cedi is considered inconsistent with competition. This is to be corrected by macroeconomic policy. The specific policy to be enacted to achieve this was not spelt out. **Taxes on agriculture were to be removed**. Institutional arrangements to accomplish the stated intentions were not spelt out rendering them un-operational.

Greater Intermediation within the Financial System

In the GPRS, there is no specific policy stated to achieve greater intermediation in the banking system.

Revising Laws and Procedures Governing the Banking Sector

The Banking Bill and Payment System Bill have been prepared but it is not clear if they have been passed into law. The banking Bill is intended to strengthen the operational independence of the Bank of Ghana in its role as a regulatory authority and to ensure greater transparency in the regulatory framework for banking. The Payment System Bill is in response to developing non-cash payment products and clearing system in order to reduce the over-dependence on cash payments in the country.

Scheme to increase long term savings/funds

Domestic banks are not well suited for providing long term financing since their deposits are subject to withdrawal at short notice. Though the problem is recognised and analysed, no concrete policy measures were recommended to address the problem.

Micro-finance for MSEs and Rural Activities

The small and medium scale enterprises in the informal sector offer significant opportunities for increases in production, productivity and employment. Provision is made for 20 percent

of the District Assembly Common Fund (DACF) to be used to support the productivity increase and income generation fund, popularly referred to as the *Poverty Alleviation Fund*. Though the document specifies the role of NBSSI in assisting district assemblies to access more funds for rural economic activities from GPRP/SIF, it does not indicate how the fund will be operated and the rules governing it. It however spells out who can benefit from the fund. There is no specific policy on informal financial service providers though they are seen to be important in financial service delivery to the poor.

Women's Micro-Finance

To reduce the difficulties and constraints faced by women in obtaining funds for financing small and micro enterprises, MOWAC has established the Women's Special Micro Finance Fund. The fund is to help the development of women-owned enterprises especially in the rural and deprived areas, augment their earning from agricultural processing and marketing activities, and acquire resources for future investments. Women smallholder farmers and entrepreneurs must form coalition groups and apply to source these funds through a National Steering Committee established by MOWAC. Special interest rates are to be charged and savings encouraged to match credits. Women will be made to buy shares in the Community Banks, Rural Bank or MFIs that participate in the scheme.

A 3.3 Constraints facing farmers

Table A3.1: Constraints Facing Farmers in the forest Zone by Wealth Categories

Ecological zone	Constraint	Wealth category			
		Semi C	NPCDR	PCDR	All
Forest	High labour cost	11.5	6.3	16.0	10.8
	Unavailability of market for produce		9.4		3.6
	Low yield		3.1		1.2
	High cost of inputs	3.8	3.1	4.0	3.6
	Lack of credit capital	15.4	21.9	8.0	15.7
	Insects pests and disease infestation	23.1	18.8	32.0	24.1
	Lack of access to land		3.1	4.0	2.4
	Erratic rainfall drought		6.3	4.0	3.6
	Unavailability of labour			4.0	1.2
	Poor storage of produce	15.4	9.4	12.0	12.0
	Low yields			4.0	1.2
	Poor market/low market prices	3.8			1.2
	Lack of funds	7.7	3.1		3.6
	Perishability		3.1		1.2
	Unavailability of inputs	11.5	6.3	4.0	7.2
	Bush fires		3.1		1.2
	None/not much of a problem	7.7	3.1	8.0	6.0
	Total	100 (26)	100 (32) (25)	100 83

Source: field data

Table A 3.2: Constraints Facing Farmers in the transitional Zone by Wealth Categories

Ecological Zone		Wealth category			Total
		Semi C	NPCDR	PCDR	
Transitional	High labour cost		5.0		2.2
	Unavailability of market for produce		5.0	7.1	4.3
	Low yield		5.0		2.2
	High cost of inputs	8.3	15.0	36	19.6
	Lack of credit capital	16.7	5.0		6.5
	Insects pests and disease infestation	8.3	10.0	14.0	10.9
	Unavailability of labour		5.0		2.2
	Poor storage of produce	25	15.0	29	23.9
	Poor market/low market prices	25.0	5.0		8.7
	Lack of funds	8.3	15.0		8.7
	Unavailability of inputs			7.1	2.2
	None/not much of a problem	8.3	15.0		8.7
	Total	100 12	100 20	.. 14	100 46

Source: field data

Table A 3. 3: Constraints Facing Farmers in the Coastal Savannah Zone by Wealth Categories

Ecological zone	Constraint	Wealth category			
		Semi C	NPCDR	PCDR	Total
Coastal savannah	High labour cost			7.4	2.2
	Low yield	2.9	3.2		2.2
	High cost of inputs	2.9	12.9		5.4
	Lack of credit capital	8.6	3.2	7.4	6.5
	Insects pests and disease infestation	34.3	22.6	37	31.2
	Lack of access to land		3.2		1.1
	Erratic rainfall drought	45.7	29.0	33	36.6
	Inadequate tractors		9.7	11	6.5
	Low yields				
	Poor market/low market prices		3.2	3.7	2.2
	Low seed viability	2.9	3.2		2.2
	Late maturity	2.9	9.7		4.3
	None/not much of a problem				
Total		100 (35)	100 (31)	27	100 (93)

Source: field data

Table A 3.4: Constraints Facing Farmers in the Guinea savannah Zone by Wealth Categories

Ecol. Zone	Constraint	Wealth category			Total
		Semi C	NPCDR	PCDR	
Guinea savannah	Low yield		3.8		1.4
	High cost of inputs	26.7	15.3	23	20.8
	Lack of credit capital	13.3	7.7	3.2	6.9
	Insects pests and disease infestation	20.0	19.2	9.7	15.3
	Lack of access to land	6.7			1.4
	Erratic rainfall drought			13	5.6
	Inadequate or untimely tractors	6.7	3.8		2.8
	Poor storage of produce	6.7			1.4
	Low yields			3.2	1.4
	Poor market/low market prices			3.2	1.4
	Lack of funds			3.2	1.4
	Unavailability of inputs	6.7	7.7	35	19.4
	None/not much of a problem				
	Low soil fertility	6.7	42.3	6.5	19.4
Total		100 18	100	...	100
			26	31	72

Source: field data

Table A 3. 5: Constraints Facing Farmers in the Sudan Savannah Zone by Wealth Categories

Ecol. zone	Constraint	Wealth category			Total
		Semi C	NPCDR	PCDR	
Sudan savannah	High cost of inputs	42.9	58.3		48.1
	Lack of credit capital		8.3		3.7
	Insects pests and disease infestation	57.1	8.3	---	37
	Erratic rainfall drought		8.3		3.7
	Poor storage of produce		8.3		3.7
	Late disbursement of funds		8.3		3.7
	None/not much of a problem				
Total		100	100	----	100
		14	12	1....	27

Source: field data

Table A 3.6: Methods used by food crop farmers to overcome constraints in the forest zone

Ecological zone	Farmer solutions to crop constraints	Frequencies	Percentages
Forest	Use of insecticides/pesticides/weedicides	11	16.5
	Early planting		0
	Forming groups to source credit	3	4.5
	Seek advice from AEs	5	7.5
	Use of fertiliser/organic manure	1	1.5
	Frequent weeding	6	9
	Use of botanicals	0	0
	Borrowing from money lenders	4	6
	None	17	25.5
	Family support	1	1.5
	Self/ own means	2	3
	Stop using improved methods	1	1.5
	Early harvest	3	4.5
	Distribute cost/ minimise risk		0
	Sun drying	2	3
	Creation of fire belts/ barriers	1	1.5
	Link with NGOs		0
	Reduce acreage cultivated	7	10.5
Isolation of diseased animals/plants	1	1.5	

Source: field data

Table A 3.7: Methods used by food crop farmers to overcome constraints in the Transitional zone

Ecological zone	Farmer solutions to crop constraints	Frequencies	Percentages
Transitional	Use of insecticides/pesticides/weedicides	6	14.4
	Advice from AEs	6	14.4
	Use of botanicals	1	2.4
	Borrowing from money lenders	4	9.6
	None	9	21.6
	Family support	3	7.2
	Self/own means	4	9.6
	Stop using improved methods	4	9.6
	Early harvest	1	2.4
	Distribute cost/minimise risk	3	7.2
	Reduce acreage cultivated	1	2.4
	Sell to poultry farmers	1	2.4
	Change variety cultivated	1	2.4

Source: field data

Table A 3.8: Methods used by food crop farmers to overcome constraints in the coastal savannah zone

Ecological zone	Farmer solutions to crop constraints	Frequencies	Percentages
Coastal savannah	Use of insecticides/pesticides/weedicides	26	33.8
	Early planting	3	3.9
	Forming of groups to source credit	13	16.9
	Advice from AEAs	2	2.6
	Use of fertilisers/organic manure	2	2.6
	Frequent weeding	1	1.3
	Use of botanicals	1	1.3
	Borrowing from money lenders	13	16.9
	None	13	16.9

Source: field data

Table A 3.9: Methods used by food crop farmers to overcome constraints in the Guinea Savannah zone

Ecological zone	Farmer solutions to crop constraints	Frequencies	Percentages
Guinea savannah	Use of insecticides/pesticides/weedicides	3	4.8
	Early planting	3	4.8
	Forming of groups to source credit	2	3.2
	Advice from AEAs	1	1.6
	Use of fertilisers/organic manure	20	32
	Frequent weeding	4	6.4
	Use of botanicals	2	3.2
	Borrowing from money lenders	3	4.8
	None	3	4.8
	Family support	1	1.6
	Self/own means	11	17.6
	Stop using improved methods	1	1.6
	Link with NGOs	1	1.6
	Reduce acreage cultivated	1	1.6
	Fencing of farm	1	1.6
	Exchange animals for fertiliser	2	3.2
	Practicing crop rotation	1	1.6
	Pay for labour with farm produce	1	1.6
	Isolation of diseased animals/plants	2	3.2

Source: field data

Table A3.10: Methods used by food crop farmers to overcome constraints in the Sudan savannah zone

Ecological zone	Farmer solutions to crop constraints	Frequencies	Percentages
Sudan savannah	Use of insecticides/pesticides/weedicides	3	18.9
	Early planting	2	12.6
	Advice from AEAs	3	18.9
	Use of fertilisers/organic manure	7	41.1
	None	1	6.3

Source: field data

Table 11: Methods Used By Livestock Farmers to Overcome Constraints by Ecological Zone

Ecological Zone	Farmer solutions to livestock constraints	No. Of Farmers
<i>Forest</i>	Self security /night watch committees	1
	Vaccination of animals	1
	Advised to join the livestock development project	1
<i>Transitional</i>	Complain to vet officer/invite vet services	1
	None	1
	Advised to join the livestock development project	1
<i>Coastal savannah</i>	Complain to vet officer/invite vet services	4
	Self security /night watch committees	1
	Vaccination of animals	1
<i>Guinea Savannah</i>	Reduction of feed waste	1
	Vaccination of animals	2
	Regular deworming/ deticking	1
	Sell some to treat the rest	1
	Sinking of wells	1
<i>Sudan savannah</i>	Complain to vet officer/invite vet services	1
	Vaccination of animals	5

Source: field data

Table 12: The Likely Impact of Policy on Constraints Facing Small-holders

Policy	Constraint	Impact
Post harvest storage	Lack of credit/funds Pests and disease	Expand production Production loss reduced
Agro-processing	Lack of credit/funds Pest and disease	Expand production, since can process
Roads	Poor market access	Expand production
Inputs	Lack of credit/funds High input cost*	Expand production
Outputs		
Crop husbandry	Lack of credit/funds Pests etc.	Expand production Production loss reduced
Livestock husbandry	Lack of credit/funds Diseases	Expand production Production loss reduced
Fish husbandry	Lack of credit/funds Diseases	Expand production Production loss reduced
Research	Pests and diseases	Increased production
Outgrower	Lack of funds	Increased production
Mechanisation	Lack of credit/funds Tractor unavailability	Increased production, more land cultivated
Micro-finance	Late disbursement of funds	Increased production
Small-scale irrigation.	Erratic rainfall/drought	Increased production
Large-scale irrigation.	Erratic rainfall/drought	Increased production

Source: field data

APPENDIX 4

MODERNISATION OF AGRICULTURE AND POVERTY REDUCTION --- INDIRECT IMPACT

The Impacts of Agricultural Modernisation Policies on the Commercial Sector

1. Typology of the Commercial Sector

The agricultural sector of Ghana may be categorised into two clear sub sectors consisting of the commercial and subsistence sub sectors. The subsistent sub sector is made up of farmers who only produce levels on which they can survive. The market is not the major reason for production. The commercial sub sector is made up of firms, individuals and households producing or undertaking activities solely for the market. Commercial actors invest and expected positive return on investment.

The commercial sub sector of the agricultural sector in Ghana may be put into four categories:

1. Farmers
2. Traders
3. Processors
4. Service providers

Commercial Farmers refer to the small and large farmers and semi-commercial farmers who cultivate crops (for food, industrial use and export), raise livestock (including poultry) or go fishing (inland or marine) mainly for sale. Their income is mainly from farming and they invest in infrastructure and services for sustained production.

Traders refer to all the intermediaries, who facilitate the movement of commodities from the initial agricultural production end to the final consumer. They may be small sedentary itinerant retailers, or small and large-scale wholesalers who sell and distribute commodities in relatively large quantities. They hold title to the goods they handle and their income is from the margin between purchases and sales. It also includes input sellers.

Processors refer to semi-commercial, small and large-scale enterprises that transform fresh crop, livestock and fish commodities to value added products.

Service providers are the agencies that render services that facilitate the distribution of agricultural products. The services include but not exclusive to financial intermediation (savings and credit), extension, warehousing, mechanisation, telecommunication, transportation and milling (grains, cassava, oil palm, sheanut, etc.).

2. The modernisation policies and indirect impact assessment

The modernisation policies identified concern post harvest storage and processing, roads, inputs and output marketing, crop, livestock and fish husbandry, research, outgrower schemes, mechanisation, micro finance, irrigation, and extension and farmer based organisations. We describe the current situation and conclude that if the policy measures as planned were well implemented then all categories of the poor would not necessary benefit from wealth created by the commercial sector actors.

Storage policy

The main thrust of the post harvest storage policy is the improved accessibility of appropriate storage facilities, improved investment in ownership and use of warehouses and encourage inventory credit schemes. The benefits that are accruing to major actors in the commercial sector is yet to be significant.

Commercial farmers in durable crop production- cereals, legumes and pulses, dried pepper in major producing areas largely use on-farm drying structures (cribs for maize, floors for others) and ordinary rooms for bag storage. Currently, the GFDC silos and warehouses that have been given up for hiring is limited and not benefiting many farmers. This has been attributed to the cost of hiring and location of structures (with implications for high transport cost).

Traders who are benefiting from the GFDC silos and warehouse that have been given up for hiring are few. Only large-scale traders in the Brong-Ahafo, Greater Accra and Eastern Regions have had access so far.

Processors of maize into animal feed and weaning foods have factory-site storage usually held for batch processing. A few take advantage of low unit prices during harvesting periods (in July August) and stock for processing during lean supply periods in April/May

Service providers providing warehousing services for rice and maize are mainly located in the regional capitals, especially in Accra and Tema for imported rice and maize.

Processing policy

The main thrust of the post harvest processing policy is the provision of appropriate technology, supply of processing equipment, and encouraging private ownership of processing equipment. The benefits that are accruing to major actors in the commercial sector are quite significant.

Commercial farmers, particularly, firms in oil palm such as TOPP, and cooperatives in irrigated rice (Afiye), have access to full complements of plants for quality product processing.

Traders of processed products are not known to possess processing machinery but they are expanding their businesses due to scale expansion of processors.

Processors of industrial cassava into starch, flour and dough (*Agbelema*) have access to all components of machinery. A few processors of cassava (into dough), sheanuts, oil palm,

coconut and groundnut (into butter and oils) have the full component of processing machinery. A few industrial processors of maize (breakfast meals), cocoa (powders, butter, chocolate, etc.), milk (cream and yoghurt), groundnuts (snacks), fruits (chunks, juices and beverages) are located in Accra and Tema and other regional capitals. There is a Tomato factory located in the Brong Ahafo region.

Service providers of machinery for cassava processing (into doughs), maize (into feed, dough and flours), sheanuts, palm kernel, copra and groundnut (into paste) are found in most urban localities. The major machinery manufacturing and repair centres (including ITTU and PHU of MOFA) are located in the regional and national capitals.

Road

The main thrust of the road policy is the improvement in the network and surface condition of feeder roads. Good conditioned feeder roads linking trunk roads leading to major consuming centres are being maintained by the District Assemblies. Most Assemblies have machinery for resurfacing of roads during harvesting periods to facilitate prompt evacuation of food from the producing areas to processing and consuming areas.

Commercial farmers and *Processors* in rural locations easily transport harvested products using trucks and tractors to trunk road sides for onward transfer to markets in both urban and rural communities.

Some wholesale *Traders* travel from district and regional capitals to rural farms to purchase vegetables (tomato, okro and pepper), cassava chips (*kokonte*) and *gari*.

Service providers retailing farm tools, small machinery, agro-chemicals and minerals, and repairing small machinery and intermediate transport vessels have located in rural areas to facilitate food production and movement.

Output marketing

The main thrust of the output marketing policy is to increase market outlets (local and export fresh and processing) and general infrastructure, improve flow of information (on prices, sources and destinations, quantities and quality), adoption of standards (packaging, labelling, weights and measures) and provision of quality products. The institutional framework for implementation is fairly developed and the benefits accruing to various actors is fairly significant.

Commercial farmers of pineapple and other fruits and vegetables have access to the export markets, processing firms and local markets. Since 1984, trends in non-traditional exports show increase in the number of exporters, volumes and values (GEPC statistics). Farmers of pineapple include small (who cultivate other food crops) and large (who concentrate on pineapple and occasionally other fruits such as papaya) firms located in rural and peri-urban communities. Several communities in the south have the youth, especially, cultivating vegetables such as chilli pepper and other Asian vegetables such as eggplant and radish for export.

Traders (including exporters) of fresh fruits and vegetables have increased although in a fluctuating manner. Many exporters only participate in seasons of favourable prices while others are not able to cope with EURE-GAP conditionality. Exporter associations are doing well with technical and managerial training of members. However, due to small-scale operators' lack of economies of scale of production, results are non-sustainable.

There are over 1000 local market places for agricultural products in Ghana. Only a few in the regional and district capitals are fenced, paved with lorry packs, stores, sheds and stalls and services for day care, financial intermediation, electricity, information centre, toilette, restaurant, health post and pipe borne water. Local traders are therefore exposed to the vagaries of the weather, theft, food spoilage and inconveniences.

Processors of cassava into *gari* and *fufu* flour, fruits into juices and syrups, fish into canned products, powdered and tablet spices, cocoa, maize and groundnut products, rice, tomatoes, cooking oils, soaps, etc. are adopting unique designs and packages and ensuring quality to survive in the growing markets for them. Promotional tools such as advertising, sales promotions and public relations are increasingly being adopted by processors and traders of most of these commodities (apart from *gari* and *fufu*).

Service providers such as vehicle owners and drivers, car parking, porters, security agents (also known as watchmen), sanitary agents have increased service provision due to increased demand for such services in the local markets. However, there is inadequate space (for car parking) and lack of well organised association for porters and other service providers, resulting in poor quality service provision.

Input

The main thrust of the input policy is improvement in access to agro inputs such as land, energy, machinery, tools and equipment, feed, seed, agro-chemicals/minerals – including veterinary drugs and other soft inputs. The land tenure system in Ghana is largely based on an inheritance system, which entrusts land to stools, clans and families. Individuals usually have only usufruct rights, which does not make transfer of title always easy. However, many individuals (male and female) have access to land for yearly farming through freehold, long leases, hiring and sharecropping. The level of security of tenure is largely dependent on the agreements reached and persons involved in the agreements. The land market for agricultural purposes is yet to be well developed; land is still regarded as property, which the living hold for the dead and generations unborn.

All other inputs have market. Agro-chemicals and minerals are largely imported and reformulated and packaged by private companies and distributed through middlemen (wholesalers and retailers) usually located at the district and sub-district capitals. Large machinery (tractors and harvesters) is also imported. Local ITTUs, firms and artisans manufacture simple tools and equipment. The major modern energy sources are electricity, gas (cooking and vehicles – petrol and diesel) and solar. Each district capital has electricity and gas depots. Some individuals in district capitals and villages use solar energy. Computers are usually imported and used for administrative operations of large firms.

Commercial farmers, particularly, large firms in oil palm cultivation and processing, cocoa, pineapple, vegetables and other export product production, and livestock/poultry raising, have access to all inputs for modern production. Occasionally, land scarcity in certain localities due to fragmentation and chieftaincy disputes prevent large firms from future expansion. High cost of agro-chemicals and minerals, computers (including personnel wage) result in less than recommended levels being used and low productivity/yield.

Traders of both raw and processed products distributing and or retailing in large markets have access to stalls, stores and shed; electricity and other facilities. Village based markets do not have all market facilities for trader convenience.

Processors have a fair access to all input required (see section on processing policy)

Service providers of machinery hiring, wholesale and retail of agro-chemicals/mineral are found in most localities although fewer in typical villages. Villages without electricity have fewer service providers.

Husbandry

The main thrust of the husbandry policy is the improvement of farm level operations which results in good land and water management, disease and pest control, weed management and post harvest handling. Good husbandry practices depend on farmer motivation, knowledge and wealth base, and competence of employees.

Commercial farmers mainly employ good agricultural practices since they are motivated by profit maximisation. All the large-scale pineapple, oil palm, vegetable, maize, rice and poultry farms visited had employed skilled (well educated professionals) permanent and temporary staffs, use own and borrowed capital, visited by or had own extension/ technical officers. Occasional application of sub-standard procedures stemmed more from high cost than lack of knowledge of good practice.

Many small-scale commercial vegetable farmers in the Keta district who have tube well pump irrigation knowledge have not adopted it due to high cost of electricity (installation and running), and pump installation.

Commercial aquaculture is a developing phenomenon. Lack of hatcheries and fingerling dealers at the local level, in addition to high demand on time has prevented its rapid development.

Improved breeds of ruminants have been introduced but the husbandry package required expensive inputs – housing, watering and supplementary feeding – from farmers in localities where livestock keeping is a culture. Livestock keeping is hardly a major source of income for any community in Ghana. It is more of an insurance facility.

Traders usually benefit from good quality product purchases if farmers adopt good husbandry practices. Occasionally, large traders who stock to take advantage of future good prices adopt chemical stock protection of fumigation for insect and rodent control, and improved aeration and sanitation to prevent fungal attack.

Processors usually benefit from good quality product purchases if farmers adopt good husbandry practices. Occasionally, large processors (particularly of poultry feed) who stock to avoid lean season supply high prices, adopt chemical stock protection of fumigation for insect and rodent control, and improved aeration and sanitation to prevent fungal attack.

Service providers have increased sales of inputs and services since good husbandry practice is incumbent on high use of purchased inputs – chemicals, tools for weed control, harvesting, spraying and tractor and labour services.

Outgrower Schemes

The main thrust of the outgrower policy is capacity building for small farmers, improvement in access to credit and the adoption of improved practices by farmers.

Commercial farmers in oil palm (particularly TOPP/BOPP and GOPDC) have reliable small holders and a few faithful outgrowers, adopting husbandry practices taught them, and receiving good quality products from these outgrowers.

Traders, particularly exporters of pineapple, supply outgrowers with agrochemicals to ensure standard product supply. A few exporter/growers of pineapple supply small farmers with technical knowledge, agro-chemicals and minerals, suckers and labour for weeding and harvesting.

Processors particularly of broilers (e.g. Darko Farms) have benefited from ADB loans to establish outgrower schemes. Small to medium scale broiler farmers are supplied with day-old chicks and feed and their product assured guaranteed market and prices.

Service providers in regional and national capital increased sale of agro-chemical/mineral, water supply and transport services due to adoption of improved technology requiring purchased inputs and hiring services by outgrower farmers.

Research policy

The main thrust of the research policy is the development of improved seed and planting, materials, improved breeds, and conservation of genetic diversity of indigenous livestock breeds. Development of management techniques for pest and disease control and land and water use is another major policy thrust. The CSIR, Atomic Energy Commission and Universities have been financed to undertake bio-technology research into selected crops for microbial fermentation, nitrogen fixation, tissue culture and plant engineering. Bio-technology research is still at experimental stage; none of the commercial sector actors is currently benefiting from its supposed usefulness.

Commercial farmers in maize, poultry, pineapple, mangoes, papaya, tomatoes, pepper, egg plant, rubber, citrus, banana, coconut, oil palm and cocoa are cultivating high yielding, disease tolerant and drought resistant varieties. Others have adopted land and water management techniques, pest and disease management and weed management techniques developed through research.

Traders, particularly exporters of food crops are benefiting from regular supply of products due to high yields and supply of quality products.

Processors are benefiting from regular supply of high quality raw materials.

Service providers increased distribution of inputs to complement adoption of improved varieties and breeds.

Micro finance

The main thrust of the finance policy is to make banking services more accessible in rural areas. Through the rural financial services project, the capacities of all rural banks are being built to enhance effective savings mobilisation and credit delivery. Capacity of *SUSU* Associations are being built to enhance their effectiveness. The Agricultural Development Fund is yet to be established. The specialised lending service including capital leasing, plant pool and inventory credit is being piloted by the private sector including NGOs.

Commercial farmers particularly the large maize growers in Ejura are benefiting from plant pools. Informal financial arrangements whereby farmers/growers sell on credit to traders/exporters is common practice in the pineapple and non-traditional crop export industry. Under outgrower schemes nucleus farmers supply inputs on credit to outgrowers. Large farmers have access to bank loans, including rural and traditional banks. Most pineapple and poultry farmers usually keep administrative offices in the regional capitals and are mostly clients of traditional banks.

Traders in the district, regional and national capitals have access to financial services of rural banks and non-bank financial institutions such as Women's World Banking and Citi Savings & Loans. Small traders of food crops are practicing informal mutual assistantship credit rotating schemes (*ROSCA*). Informal wholesaler to retailer credit schemes, whereby commodities are delivered based on deferred payment arrangements is common among all food trader in Ghana.

Processors, particularly of cassava into gari, sheanuts, fish, oil palm and coconut have received credit from NGO, Poverty Alleviation Fund, and Social Investments Fund.

Service providers, especially rural banks in most of the 110 districts have been receiving training in relevant skills of mobilising savings and delivering credit. Micro-finance NGOs are increasingly organising farmer/processor groups and giving them training in the management of investment capital. The NGOs also guarantee loans for such small groups.

Mechanisation

The main thrust of the mechanisation policy is to develop the system of capital leasing, plant pool and joint ventureship so that individual farmers will improve access to hired services.

Commercial farmers, particularly of maize, pineapple and mango, in the savannah and transitional zones usually hire tractors for ploughing and harrowing. Rice farmers under

irrigation use power tillers and combined harvesters. However, plant pools, and joint ventureship is yet to develop. There is a plant pool in Ejura, Block Farming, in the Brong Ahafo region

Traders, particularly of maize and local rice increased domestic supply due to large-scale production under mechanisation.

Processors, many of whom are small scale, particularly of sheanuts, oil palm, coconut, gari and fish, have been organised into groups by NGOs and the District Assemblies, and loaned plants and machinery to reduce the drudgery in traditional processing methods.

Service providers have increased supply of particularly, tractor and milling services.

Irrigation

The main thrust of the irrigation policy is to provide irrigation and moisture supply improvement facilities as well as improve valley bottom drainage. Micro and small-scale irrigation including boreholes, dugouts and tube wells are being promoted. Rehabilitation of large-scale irrigation in Afeke, Weija and Tono is underway.

Commercial farmers, mostly small scale, in rice and vegetables located in restricted areas in the Volta, Greater Accra, Eastern and Upper East regions, are taking advantage of large-scale irrigation in Afeke, Weija, Ashaiman, Dawhenya, Kpong and Tono to produce at least one season rice and one season vegetable. Small-scale irrigation for vegetables such as shallots, okro, pepper and onions using tube wells and dugouts is common in the Keta and Ketu districts. However, throughout the country, vegetable gardens using dugouts with bucket watering is still the commonest practice.

Traders have increased business in supply of domestic rice and vegetables.

Processors have increased business in supply of domestic rice for processing.

Service providers increased supply of, milling service for domestic rice; irrigation inputs such as sprinkler pipes, hose, etc.

Extension/FBOs

The main thrust of the extension policy is to ensure pluralism and demand driven message development and dissemination through FBOs.

Commercial farmers easily adopt improved technology so the extension agents visit them on call. There are crop based and general growers associations that meet to share ideas and receive information from extension whenever it is necessary.

Traders of food crops are usually in informal associations and they hardly receive market and management information from extension. There are exporter associations that are formally organised but hardly receive product and market management information from MOFA's

extension agents. The extension service in Ghana is production bias. NGOs extend technical and management information to groups organised by them.

Processors hardly receive management information from extension. NGOs extend technical and management information to groups organised by them.

Service providers associations are not well organised and MoFA's extension hardly visits to give information on stock management, environmental protection and customer care.

Transmission Channels of Commercial Sector Impacts on the Poor

Strengthening the major policy intentions should create employment, stabilise prices (input and output), generate tax revenues and transfer and increase access to goods and services and assets of all categories of the poor, except adult dependents. Adult dependents would only benefit from special programmes, which has been provided for under GPRS.

Agricultural modernisation policies on the commercial sector actors that would generate increased level of employment for the PCDR include:

- Agro-processing (through commercial farmers and processors),
- Roads (through commercial farmers and service providers),
- Output marketing (through traders and processors)
- Inputs to production (through commercial farmers)
- Crop, livestock and fish husbandry (through commercial farmers),
- Outgrower scheme (through commercial farmers, traders, processors and service providers),
- Micro-finance (through traders, processors and service providers),
- Research –technology generation – (through processors),
- Irrigation (through commercial farmers),
- Mechanisation (through commercial farmers)

Agricultural modernisation policies on the commercial sector actors that would generate increased level of employment for the urban poor include:

- Post harvest storage policy (through commercial farmers and warehouse service providers),
- Agro-processing (through processors and service providers),
- Roads (through processors and service providers),
- Crop, livestock and fish husbandry (through commercial farmers),
- Outgrower scheme (through traders and processors),
- Micro-finance (through processors and service providers),
- Irrigation (through commercial farmers),
- Mechanisation (through processors and service providers),
- Extension and use of farmers based organisation (through traders and commercial farmers)

Agricultural modernisation policies on the commercial sector actors that which generate increased level of employment for the poor women include

- Road (through commercial farmers),
- Output marketing (through traders)
- Crop, livestock and fish husbandry (through commercial farmers),
- Irrigation (through commercial farmers),
- Extension and use of farmers based organisation (through commercial farmers and traders)

Some of the agricultural modernisation policies directed at the commercial sector have low or negligible (positive) indirect effect on employment for the poor (see Tables 1 to 5). These policies include post harvest storage, and extension and farmer-based organisation, in the case of PCDR and inputs for production, output marketing and research (technology generation) policies in the case of urban poor persons. In the case of the poor women, most of the modernisation policies directed at the commercial sector have low or negligible (positive) employment indirect effect.

The logic for storage and processing:

If the appropriate storage and processing technologies and facilities are provided at both the farm and industry levels, then:

Commercial farmers (in rural and peri-urban locations) would seek to expand their production base for increased stocks for all year round supply to traders and processors. The farmers would employ able-bodied poor rural and urban men and women for harvesting, sorting/grading and carting (loading and unloading). Increased supply in competitive markets would create competitive prices for poor farmers (men and women) producing the same commodities and low food prices for both rural and urban poor consumers. Increased farm income for large farmers would result in some transfer commitment to the disabled.

In the short-run due to tax holidays and low likelihood of taxing farmers in the informal sector, low tax revenues would result in negligible provision of public good for use by all including the poor. In the long run, government revenue from taxes of commercial farms that no longer enjoy tax holidays and those that have been identified by the District Assembly would provide more social services and information for communities. This would result in improved access by all categories of the poor. In addition, if the poor were employed, their access to purchased food, simple farm tools and services (including transportation, milling, repair works, etc. would improve. The financial and physical assets (radio, push truck, furniture) and child education of the 'able' poor would also improve.

Traders of both raw and processed products would seek to expand their supply base, increased their stocks and employ able-bodied poor rural and urban men (depending on location of site) and women for packing and carting. Some poor urban women may also be employed as assistant sales persons. Increased supply in competitive markets would create competitive (likely low) prices for urban poor small traders (men and women) dealing in the same commodities and low food prices for both rural and urban poor consumers. Increased income for large traders would result in increased transfer commitment to the disabled. In the short-run due to tax holidays and

low likelihood of taxing small traders in the informal sector, low tax revenues would result in negligible provision of public good for use by all including the poor. In the long run, government revenue from taxes of large traders that no longer enjoy tax holidays and those that have been identified by the District Assembly would provide more social services and information for communities. This would result in improved access by all categories of the poor. In addition, if the poor were employed, their access to purchased food, simple tools and services (including transportation, milling, repair works, etc.) would improve. The financial, physical (radio, push truck, furniture) and human assets (child education) of the 'able' poor would also improve.

Processors (small and large in rural and urban areas) would stock larger volumes and expand their supply base (including differentiate products). Able-bodied poor rural and urban men and women would be employed for, packaging and labelling and carting. Increased supply in competitive markets would create competitive (likely low) prices for urban poor small processors (mainly women) of the same commodity and low food prices for both rural and urban poor consumers. Increased income for large processors would result in increased transfer commitment to the disabled. In the short-run due to tax holidays and low likelihood of taxing small processors in the informal sector, low tax revenues would result in negligible provision of public good for use by all including the poor. In the long run, government revenue from taxes of large processors that no longer enjoy tax holidays and those that have been identified by the District Assembly would provide more social services and information for communities. This would result in improved access by all categories of the poor. In addition, if the poor were employed, their access to purchased food, simple tools and services (including transportation, milling, repair works, etc.) would improve. The financial, physical (radio, push truck, furniture) and human assets (child education) of the 'able' poor would also improve.

Service Providers would seek to expand their service supply base – pesticide trade, warehousing, artisanry and machine repairs, transport (drivers and owners), financial intermediation and training. Increased supply of services due to increased demand by raw food traders and processors would create employment for the poor (particularly men) with skills. Increased service would result in low charges creating high income for large service providers and low income for small poor providers (artisans and repairers). Training by NGOs at low or no cost (transfer payments) would increase for the poor. Transfer payments by large service providers is increased. Government revenue from taxing Service Providers (excluding NGOs) by the District Assembly and Internal Revenue Services, would provide more social services and information for communities. This would result in improved access by all categories of the poor. If the poor were employed, their access to purchased food, simple tools and services (including transportation, milling, repair works, etc.) would improve. The financial, physical (radio, push truck, furniture) and human assets (child education) of the 'able' poor would also improve. Even if service providers employ the non-poor, their asset base would increase and they would provide private physical assets (e.g. Television) for communal use.

The logic for road and output marketing policy

If there is improvement of road network and surface conditions and the efficiency of output marketing improves due to increased market outlets and general infrastructure, improved flow of

information (prices, sources and destinations, quantities and quality), adoption of standards (packaging, labelling, weights and measures) and provision of quality products then:

Commercial farmers (in rural and peri-urban locations) would seek to expand their production base for increased supply to traders and processors. The farmers would employ able bodied poor rural and urban men and women for harvesting, sorting/grading and carting (loading and unloading). The results of increased output on prices, tax revenue, transfers and access to goods, services and assets is as already described.

Traders of raw and processed products would seek to expand their supply base and employ able-bodied poor rural and urban men (depending on location of site) and women for harvesting (of cassava) packaging and repackaging, packing and carting. Some poor urban women may be employed as assistant sales persons.

Processors (small and large in rural and urban areas) would have easy access to source of raw material supply and seek to expand their supply base (including differentiated products). They would employ able-bodied poor rural and urban men and women for, packaging and labelling and carting.

For both traders and processors increased supply of high value products would create non-competitive markets and crowd out poor low value products and non-competitive prices for small-scale traders (men and women). Urban poor consumers cannot access high value foods and would continue to patronise low value foods. In the short run, elastic demand for high value products would result in minimum profit margins and would result in limited transfer commitments to the disabled. In the long run, improved demand due to widespread awareness would result in increased profitability. Government revenue from taxes of traders and processors by the District Assembly and Internal Revenue Services, would provide more social services and information for communities. This would result in improved access by all categories of the poor. Marginal increases in the financial and physical assets of the 'Able' poor would be realised.

Service Providers would locate nearer to the client and seek to expand their service supply base – grain milling, artisanry and repairs, transport (drivers and owners), financial intermediation and training). Increased supply of services due to increased demand by processors and traders would create employment for the poor (particularly men) with skills. Increased service would result in low charges creating high income for large service providers and low income for small poor providers (artisans and repairers). Easier access by Training organisations (especially NGOs) would increase transfers to the poor.

Transfer payments by large service providers is also likely to increase. Government revenue from taxing Service Providers (excluding NGOs) by the District Assembly and Internal Revenue Services would provide more social services and information for communities. This would result in improved access by all categories of the poor. If the poor were employed, their access to purchased food, simple tools and services (including transportation, milling, repair works, etc.) would improve. The financial, physical (radio, push truck, furniture) and human assets (child education) of the 'able' poor would also improve. Even if service providers employ the non-poor, their asset base would increase and they would provide private physical assets (e.g. Television) for communal use.

The logic for general farm level resources

If access to agro inputs such as land, energy, machinery, tools and equipment, irrigation water, soft inputs and agro-chemicals are improved (available and affordable with use of credit), and knowledge on application increases (through effective extension), farm level operations would improve and result in good land and water management, disease and pest control, weed management and post harvest handling, then:

Commercial farmers (in rural and peri-urban locations) would seek to expand their production base. In the short run, with incomplete mechanisation, able-bodied poor rural and urban men and women would be employed for all kinds of farm activities – weeding, planting, spraying, harvesting, sorting/grading and carting (loading and unloading). Increased supply in competitive markets would create competitive prices for poor farmers' (men and women) product and low food prices for urban poor consumers. Increased farm income of commercial farmers (dependent on elasticity of demand) could result in increased transfer commitment to the disabled. In the long run, government revenue from taxes of commercial farms that no longer enjoy tax holidays and those that have been identified by the District Assembly, would provide more social services and information for communities. This would result in improved access by all categories of the poor. Marginal increases in the human, social, financial and physical assets of the 'able' poor would be realised.

The direct impact on non-farm commercial firms is negligible. However, if the commercial farmer benefits then:

Traders would seek to expand their supply base and employ able-bodied poor rural and urban men and women for sorting/grading, packaging and labelling and carting. Increased supply of high value products would create non-competitive markets and crowd out poor low value products and non-competitive prices for small-scale traders (men and women). Urban poor consumers cannot access high value foods and would continue to patronise low value foods. In the short run, elastic demand for high value products would result in minimum profit margins and would result in limited transfer commitments to the disabled. In the long run, improved demand due to widespread awareness would result in increased profitability. Government revenue from taxes of traders by the District Assembly and Internal Revenue Services would provide more social services and information for communities. This would result in improved access by all categories of the poor. Marginal increases in the financial and physical assets of the 'Able' poor would be realised.

Processors would be able to expand their supply base (including differentiated products) and employ able-bodied poor rural and urban men and women for sorting/grading, packaging and labelling and carting. Increased supply of high value products would create non-competitive markets and crowd out low value products and create non-competitive prices for small traditional processor (especially poor women). Urban poor consumers cannot access high value products and would continue to patronise low value products. In the short run, elastic demand for high value products would result in minimum profit margins and would result limited transfer

commitments to the disabled. In the long run, improved demand due to widespread domestic awareness would result in increased profitability. Government revenue from taxing processors by the District Assembly and Internal Revenue Service would provide more social services and information for communities. This would result in improved access by all categories of the poor. Marginal increases in the financial and physical assets of the 'Able' poor would be realised.

Service Providers would seek to expand their service supply base – agro-chemicals and mineral dealers, grain milling, artisanry and machinery repairs, transport (drivers and owners), financial intermediation and training). Increased supply of services due to increased demand by farmers, processors and traders would create employment for the poor (particularly men) with skills. Increased service would result in low charges creating high income for large service providers and low income for small poor providers (artisans and repairers). Training by NGOs at low or no cost (transfer payments) would increase for the poor. Transfer payments by large service providers is increased. Government revenue from taxing Service Providers (excluding NGOs) by the District Assembly and Internal Revenue Services would provide more social services and information for communities. This would result in improved access by all categories of the poor. If the poor were employed, their access to purchased food, simple tools and services (including transportation, milling, repair works, etc.) would improve. The financial, physical (radio, push truck, furniture) and human assets (child education) of the 'able' poor would also improve. Even if service providers employ the rural non-poor only, their asset base would increase and they would provide private physical assets (e.g. television) for communal use.

The logic for outgrower schemes

If the out-grower schemes are well organised guarantee funding for nucleus farms then

Commercial farmers who engaged in an outgrower scheme would create employment opportunity for other low income groups. PCDR participating as outgrowers will be exposed to increase employment and income opportunities. Also the urban poor and poor women within catchment areas of the scheme would be attracted to provide some extra amount of farm wage labour. However, increased production without proper and adequate provision for storage and processing will result in lower prices for food crops in particular of the growers. But the urban poor and welfare dependent persons would benefit from the lowering prices of products (food produce). The outgrower scheme may indirectly enhance the PCDRs' access to improved inputs, higher income (depending on elasticity) and food (if the scheme includes crops they use). The scheme may also enhance the skills (assets) of participating able poor. The impact of government tax revenue from taxation of commercial farms on the poor and vulnerable depends on the tax holidays and redistribution policies of the government.

Traders responding to modernisation policy through outgrower scheme would help raise the employment opportunities of the able poor persons to medium levels through contracting the PCDR in actual production, women in retailing and urban poor in packing and carting and retailing. If marketing arrangements are well organised, then prices would be smoothed for poor groups; they stand to get better income and improved purchasing power and therefore enhanced access to goods and services, particularly lean season access to food. Also assets would be improved through good linkage and trade arrangements.

Processors who seek to expand under an outgrower scheme would increase their raw material supply base and employment for PCDRs providing farm produce as raw materials for processing would be high. But some local small processor, mostly poor women, may lose market share to larger ones and could be put out of employment, if there are no special programmes that seek the interest of such vulnerable groups. Job opportunities are opened to the urban poor by both processors and raw material producers who engage them in their operation. Also rural location of processing plants over urban location would favour urban – rural migration of the poor (i.e. urban poor). Processing would stabilise and in the long run reduce the producer prices for the PCDR and the urban poor, poor women and welfare dependent persons would benefit from stabilised and reduced prices. Also, access to processed products would be improved. Processing enhanced through outgrower scheme may generate significant tax revenue but impact depends on government’s tax holidays and redistribution policies. The welfare dependent persons may also benefit from increased charities due to higher gains in the economy.

Service providers’ increased supply of services would enhance the fortune of the PCDR most through increased employment, increase access to improved input services and processed goods available, and higher assets. Employment and asset levels of the urban poor and poor women would not be enhanced much.

Table A4.1: Likely indirect impacts of post-harvest storage and processing policy on different categories of the poor

Policy	Actors	Transmission Channels	PCDR	Urban Poor	Poor Women	Welfare Dependent		
<p>POST HARVEST STORAGE AND PROCESSING</p> <ul style="list-style-type: none"> - appropriate storage facilities and appropriate processing technologies - ownership and use of warehouses and equipment - inventory credit 	<p>COMMERCIAL FARMERS (reduced spoilage & stable prices are incentives for increased production and better output prices)</p>	Employment	Some rural jobs created	Some rural jobs created for those who can migrate	Low	Nil		
		Transfer	Negligible	Nil	Nil	Nil		
		Tax	Negligible gain (Low or no taxes because of tax holidays. Most of such farmers are not registered)					
		Prices	Low (gains due to price stabilisation but extent depends on many other variables)					
		Access	Low (Improved access to food if it includes the crops they use)					
		Assets	Negligible	Low (Skills of employees, but mainly unskilled)		Nil		
		<p>TRADERS (increased volume of trade due to increased production)</p>	Employment	Negligible (marginal increase in post harvest labour requirements)	Low (marginal incentive for urban-rural migration)	Negligible (marginal demand for marketing activities)	Nil	
			Transfer	Negligible gain (depends on priorities of trader)				
			Tax	Low (3% of total volume traded-much goes to local government. Impact depends on government expenditure choice) ('dodgability')				
			Prices	Negligible Price smoothing - Increase during peak but may lose if selling at lower prices)	Negligible Smoothing benefits predictable less extreme but troughs dis better mechanisation services, including regular maintenance, results in Improved efficiency of mill and transport operators, appear			
			Access	Low (improved access to food in lean season)				
			Assets	Negligible				

PROCESSORS (Reduced losses due to spoilage, result in increased volume of output for processing)	Employment	Low (some rural jobs but some may lose market share to larger group and therefore in jobs)	More jobs	Low (some rural jobs created but some may lose market share to larger group and therefore decrease in jobs)	Nil	
	Transfer	Negligible (less losses)				
	Tax	May generate significant tax but impact depends on government use of tax				
	Prices	Decreased prices of small processor through industrialisation e.g. palm oil processing but not others	If through industrialisation, lower price but if not, vice versa	Prices may fall for processors but consider quality	Nil	
	Access	Low (improved access to market if for food they buy)				
	Assets	Negligible (Net change depends on relative size of positive and negative impacts)			Nil	
	SERVICE PROVIDERS (Warehouse operators benefit from new technologies and financial support to improve their efficiency; hence good quality output available all year round)	Employment	Negligible	Increases through warehouse, etc.	Negligible	Negligible
		Transfer	Negligible			
		Tax	May generate significant tax but impact depends on government use of tax			
		Prices	Negligible	Negligible	Negligible	Nil
Access		Negligible	Negligible	Negligible	Nil	
Assets		Negligible	Negligible	Negligible	Nil	

Source: Study Team

Table A4.2: Likely indirect impacts of road and output marketing policy on different categories of the poor

Policy	Actor	Transmission channels	PCDR	URBAN POOR	WOMEN	WELFARE DEPENDENT	
Road and Output marketing	Commercial Farmers -export -industrial -food (low transaction cost increase output)	Employment	Harvesting	Harvesting	Harvesting	Nil	
		Transfer	Negligible	Negligible	Negligible	Negligible	
		Tax	Some social services in the medium to long run				
		Prices	Competitive prices for food crops; Low consumer prices for some commodities; high price for mono/oligo. products.				Low consumer prices for some commodities; high price for mono/oligo. products
		Access	Improves: food, social services, information				
		Assets	If employed, social, financial, human, physical, improves marginally				Negligible
		Traders: exporters, LBCs, wholesalers, retailers (low transaction cost increase volume handled)	Employment	Sorting and grading, packaging and carting. Sale assistants			
	Transfer	Negligible	Negligible	Negligible	Negligible	Negligible	
	Tax	Social services	Social services	Social services	Social services	Social services	
	Prices	Competitive prices for food crops; Low consumer prices for some commodities; high price for mono/oligo. products.				Low consumer prices for some commodities; high price for mono/oligo. products	
	Access	Improves: food, social services, information					
	Assets	If employed, social, financial, human, physical, improves				Negligible	

	Processors: Small modern (Fish, oil) Industrial (oil, starch, canned fish). Low transaction cost, high quality, increase output)	Employment	Sorting, labelling, packaging, carting	Sorting, labelling, packaging, carting	Sorting, labelling, packaging, carting	Nil
		Transfer	Negligible			
		Tax	Some social services may be provided			
		Prices	Competitive prices for food products; Low consumer prices for some commodities; high price for mono/oligo. products			
		Access	Improves	Improves	Improves	Improves
		Assets	If employed financial, physical human, social asset improves			Nil
	Service Providers (Low transaction cost, high quality, increase output)	Employment	Negligible			Nil
		Transfer	Negligible	Negligible	Negligible	Negligible
		Tax (excluding NGOs)	Some social services			
		Prices (charges)	Enjoy low per unit charges due to increased demand for services			
		Access	Negligible			
		Assets				

Source: Study Team

Table A4.3: Likely indirect impacts of availability of general farm-level resources on different categories of the poor

Policy	Actors	Transmission channels	PCDR	URBAN POOR	WOMEN	WELFARE DEPENDENT	
General farm level resources Inputs to production <i>(land; energy, machinery, tools and equipment; soft inputs; agro-chemicals);</i> Research results leading to good husbandry; Mechanisation and irrigation facilities Micro finance and extension	Farmers adopt for improved productivity -- incomplete mechanisation in short term	Employment	Harvesting, assembling	Some, for those who can migrate daily	Some, for those who are energetic	Nil	
		Transfer	Negligible				
		Tax	Some social services may be provided				
		Prices	Increased output resulting from increased farm size and intensification could bring down prices and gains.				
		Access	Improves: food, husbandry messages				Food
		Assets	If employed improves human, social, physical and financial				Nil
		Traders increase volume handled when farmers expand	Employment	Some- packing and crating	Parking, carting, sales assistants, retailers	Retailers	Nil
	Transfer		Negligible				
	Tax		Some social services				
	Prices		Stable prices in the short run, lower prices in the long run , low incomes, low expenditure on food				
	Goods and services		Improve: food, social services, information				
	Assets		If employed improves human, social, physical and financial				Nil
	Processors Increase volume processed	Employment	Low, only for non-skills activities- carting	Low, only for non-skills activities- carting	Negligible, may lose competition	Nil	
		Prices	Increased output resulting from increased farm size and intensification could bring down prices and gains				
		Goods and services	Improve: food, social services, information				
		Assets	If employed improves human, social, physical and financial				Nil
		Transfer	Negligible				
		Taxes	Some social services				
	Service providers	Employment, transfer, access, assets	Negligible	Negligible	Negligible	Negligible	
		Tax	Some social services				

Source: Study Team

Table A4.4: Likely indirect impacts of outgrower policy on different categories of the poor

Policies	Actors	Transmission channels	PCDR	URBAN POOR	WOMEN	WELFARE DEPENDENT	
Outgrower Scheme	Farmers (Guaranteed credit for nucleus farms to build capacity of small holders)	Employment	Some for outgrowers	Nil	Some for outgrowers	Nil	
		Transfer	Negligible				
		Tax	Some social services				
		Prices	Stable and perceived low	Benefit from low prices of products	Stable and perceived low	Benefit from low prices of products	
		Access to goods and services	Stable income improves access to goods and services	To food improves if it includes the crops they use	Stable income improves access: food and raw materials for processing (cassava, oil palm)	To food improves if it includes the crops they use e.g. palm oil	
		Assets	If employed improves human, social, physical and financial	Nil	If employed improves human, social, physical and financial	Nil	
	Traders (exporters, those purchasing rejects)	Employment	Some, packing, carting, sale assistants, retailers				Nil
		Transfer	Negligible				
		Tax	Some social services				
		Prices	Low food prices				
		Access to Goods and services	Better incomes so improved access to food in lean season				Low expenditure on food
		Assets	If employed improves human, social, physical and financial				Nil

	Processors (Manage nucleus farms; highly mechanised; buy form nucleus farms)	Employment	Some skilled, for machine operation, packing and carting	Some skilled, for machine operation, packing and carting if sited in urban or peri-urban	Negligible, small local processor may lose market share to larger group	Nil	
		Prices	Price Stabilises and then reduces in the long run				
		Access to Goods and services	Improved access to processed products				
		Assets	If employed improves human, social, physical and financial; Lower for women				Nil
		Transfer	Negligible				
		Taxes	Some social services				
	Service providers (Maintenance, supplies – chemical, computers, etc)	Employment	Negligible				
		Price					
		Access to Goods and services					
		Transfer					
		Assets					
Taxes	Some social services						

Source: Study Team

